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First Named Inventor	Hirezaki, Katsumi
Art Unit	2661
Examiner Name	Unassigned
Attorney Docket Number	16869P-094700US

Total Number of Pages in This Submission: 12

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
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- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53

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- ☐ Licensing-related Papers
- ☒ Renewed Petition to Make Special
- ☐ Petition to Convert to a Provisional Application
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Townsend and Townsend and Crew LLP		
Signature			
Printed name	Chun-Pok Leung		
Date	April 21, 2005	Reg. No.	41,405

CERTIFICATE OF TRANSMISSION/MAILING

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PATENT & TRADEMARK OFFICE

PATENT
Attorney Docket No.: 16869P-094700US
Client Ref. No.: 340300257US01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

KATSUMI HIREZAKI et al.

Application No.: 10/684,060

Filed: October 10, 2003

For: CONTROL METHOD OF STORAGE SYSTEM, STORAGE SYSTEM, AND STORAGE APPARATUS

Customer No.: 20350

Examiner: Unassigned

Technology Center/Art Unit: 2661

Confirmation No.: 5249

RENEWED PETITION TO MAKE SPECIAL FOR NEW APPLICATION UNDER M.P.E.P. § 708.02, VIII & 37 C.F.R. § 1.102(d)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Decision dated April 4, 2005 dismissing the original petition to make special, Applicants respectfully submit a renewed petition to make special the above-identified application under MPEP § 708.02, VIII & 37 C.F.R. § 1.102(d). The application has not received any examination by an Examiner.

(a) The Commissioner has previously been authorized to charge the petition fee of $130 under 37 C.F.R. § 1.17(i) and any other fees associated with this paper to Deposit Account 20-1430.

(b) All the claims are believed to be directed to a single invention. If the Office determines that all the claims presented are not obviously directed to a single invention, then Applicants will make an election without traverse as a prerequisite to the grant of special status.

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(c) Pre-examination searches were made of U.S. issued patents, including a classification search, a foreign patent database search, and a literature search. The searches were performed on or around October 15, 2004, and were conducted by a professional search firm, Mattingly, Stanger & Malur, P.C. The classification search covered Class 713 (subclasses 1, 300, 310, 323, and 340) and Class 714 (subclass 14). Because of the large size of these subclasses, keywords were used to narrow of number of documents returned. The foreign patent database search was conducted using Espacenet in international subclass G06F1/26, directed to power supply means, e.g., regulating of, for data processing equipment. The literature search was performed using DIALOG online databases. The inventors further provided four references considered most closely related to the subject matter of the present application (see references #7-10), which were cited in the Information Disclosure Statement filed on October 10, 2003.

(d) The following references, copies of which were previously submitted, are deemed most closely related to the subject matter encompassed by the claims:

(1) U.S. Patent No. 5,745,391;

(2) U.S. Patent No. 5,835,780;

(3) U.S. Patent No. 6,415,387 B1;

(4) U.S. Patent Publication No. 2004/0068672 A1;

(5) U.S. Patent Publication No. 2004/0111596 A1;

(6) European Patent Publication No. EP 1302840 A2;

(7) U.S. Patent Publication No. 2002/0087899 A1;

(8) U.S. Patent No. 6,389,546;

(9) Japanese Patent Publication No. JP 2002-135974; and

(10) Japanese Patent Publication No. JP 2002-006998.

(e) Set forth below is a detailed discussion of references which points out with particularity how the claimed subject matter is distinguishable over the references.

A. Claimed Embodiments of the Present Invention

The claimed embodiments relate to controlling power supply to storage devices.

Independent claim 1 recites a storage system including an information processing device having a first power supply which activates a function for transmitting at least one of a data input and output request, and a storage device connected to communicate with the information processing device having a second power supply which activates a function for accepting the at least one of the data input and output request transmitted from the information processing device. A method of controlling the storage system comprises, when the second power supply is turned on and the storage device can accept the at least one of the data input and data output request transmitted from the information processing device, the storage device transmitting a power-on request for turning on the first power supply to the information processing device.

Independent claim 2 recites a method for a controlling a storage system, the storage system including an information processing device having a first power supply which activates a function for transmitting at least one of a data input and a data output request, and a plurality of storage devices connected to communicate with the information processing device, each storage device having a second power supply which activates a function for accepting the data input and output request which is transmitted from the information processing device. The method comprises connecting the storage devices to communicate with each other; from a first storage device transmitting a power-on request for turning on the second power supply to a second storage device, when the second power supply of the first storage device is turned on; the first storage devices receiving from the second storage device a notification that the second storage device can accept the data input and data output request being transmitted from the information processing device; and the first storage devices transmitting a power-on request for turning on the first power supply to the information processing device when the second storage device can accept the data input and data output request being transmitted from the information processing device.

Independent claim 4 recites a method of controlling a storage system including an information processing device having a first power supply which activates a function for transmitting a data input and output request; and a storage device connected to communicate with the information processing device having a second power supply which activates a function for accepting the data input and data output request transmitted from the information processing device. The method comprises, when the storage device accepts a stop instruction of the second power supply, the storage device transmitting a stop-power request for turning off the first power supply to the information processing device.

Independent claim 6 recites a control method of a storage system comprising a plurality of information processing devices each having a first power supply which activates a function for transmitting a data input and data output request and a storage device connected to communicate with the plurality of information processing devices through a network, having a second power supply which activates a function for accepting the data input and data output request which is transmitted from the information processing device. The method comprises, the storage device transmitting a power-on request for turning on the first power supply to all of the information processing devices, when the second power supply is turned on and the storage device can accept the data input and data output request being transmitted from the information processing device; the information processing device turning on the first power supply when the information processing device receives the power-on request for turning on the first power supply from the storage device; the information processing device notifying a network address on the network which is given to the information processing device, to the storage device when the first power supply is turned on and the information processing device enters into such a situation that the information processing device can transmit the data input and output request; the storage device storing the network address when the storage device receives the network address from the information processing device; and the storage device transmitting a power-stop request for stopping the first power supply to the information processing device to which the stored network address is given, in case that a stop instruction of the second power supply was applied to the storage device.

Independent claim 7 recites a method of controlling a storage system including a plurality of information processing devices each having a first power supply which activates a function for transmitting a data input and data output request and a storage device connected to the plurality of information processing device to communicate with each other through a network, having a second power supply which activates a function for accepting the data input and data output request transmitted from the information processing device. The method comprises, the storage device transmitting a power-on request for turning on the first power supply to all of the information processing devices, when the second power supply is turned on and the storage device enters into such a situation that the storage device can accept the data input and output request being transmitted from the information processing device; the information processing device turning on the first power supply when the information processing device receives the power-on request for turning on the first power supply from the storage device; the information processing device notifying a network address on the network which is given to the information processing device, to the storage device when the first power supply is turned on and the information processing device enters into such a situation that the information processing device can transmit the data input and output request; the storage device storing the network address when the storage device receives the network address from the information processing device; and the storage device transmitting a power-on request for turning on the first power supply to the information processing device to which the stored network address is given, when the second power supply is turned on and the storage device enters into such a situation that the storage device can accept the data input and output request being transmitted from the information processing device.

Independent claim 8 recites a storage system comprising an information processing device having a first power supply which activates a function for transmitting a data input and output request; and a storage device connected to the information processing device in such a manner that the storage device and the information processing device can communicate with each other, having a second power supply which activates a function for accepting the data input and output request which is transmitted from the information processing device. The storage device includes means for transmitting a power-on request for turning on the first power supply to the information processing device, when the second power supply is turned on and the storage device can accept the data input and the data output request transmitted from the information processing device.

Independent claim 9 recites a storage system comprising an information processing device having a first power supply which activates a function for transmitting a data input and output request; and a storage device connected to the information processing device in such a manner that the storage device and the information processing device can communicate with each other, having a second power supply which activates a function for accepting the data input and output request which is transmitted from the information processing device. The storage device includes means for transmitting a power-stop request for stopping the first power supply to the information processing device when the storage device accepts a stop instruction of the second power supply.

Independent claim 10 recites a storage apparatus connected to communicate with an information processing device. The information processing device has a first power supply which activates a function for transmitting a data input and output request. The storage apparatus has a second power supply which activates a function for accepting the data input and output request being transmitted from the information processing device. The storage apparatus further has means for transmitting a power-on request for turning on the first power supply to the information processing device, when the second power supply is turned on and the storage apparatus can accept the data input and output request being transmitted from the information processing device.

Independent claim 11 recites a storage apparatus connected to an information processing device in such a manner that the storage apparatus and the information processing device can communicate with each other. The information processing device has a first power supply which activates a function for transmitting a data input and output request. The storage apparatus has a second power supply which activates a function for accepting the data input and output request being transmitted from the information processing device. The storage apparatus has means for transmitting a power-stop request for stopping the first power supply to the information processing device when the storage apparatus accepts a stop instruction of the second power supply.

One of the benefits that may be derived is that when the power supply of the storage device is turned on, the storage device enters a state where it can accept the data input and output requests transmitted from the information processing device. After that, the power supply of the information processing device is turned on enabling control of the power supply of the storage device and the power supply of the information processing device in an interlocked manner. When the storage device accepts the stop instruction, the power supply of the information processing device is stopped, and then the power supply of the storage device is stopped.

B. Discussion of the References

None of the following references disclose an information processing device having a first power supply and a storage device having a second power supply, wherein the storage device transmits power-on and/or power-off requests to the power supply of the information processing device. More specifically, independent claim 1 recites a storage device that transmits a power-on request for turning on power supply to the information processing device. Independent claim 2 recites first storage devices that transmit a power-on request for turning on power supply to the information processing device. Independent claim 4 recites a storage device that transmits a stop-power request for turning off power supply to the information processing device. Independent claim 6 recites a storage device that transmits a power-on request for turning on power supply to the information processing device and a power-stop request for stopping power supply to the information processing device. Independent claim 7 recites a storage device that transmits a power-on request for turning on power supply to the information processing device. Independent claim 8 recites a storage device that includes means for transmitting a power-on request for turning on power supply to the information processing device. Independent claim 9 recites a storage device that includes means for transmitting a power-stop request for stopping power supply to the information processing device. Independent claim 10 recites a storage apparatus that includes means for transmitting a power-on request for turning on power supply to the information processing device. Independent claim 11 recites a storage apparatus that includes means for transmitting a power-stop request for stopping power supply to the information processing device.

1. U.S. Patent No. 5,745,391

This reference discloses an apparatus and method for turning on and off a computer. On and off commands may be received from a remotely-located central controller. Thus, the reference discloses on/off commands traveling across a network, but it does not teach that an information processing device has a first power supply and a storage device has a second power supply, and the storage device transmits power-on and/or power-off requests to the power supply of the information processing device, as recited in independent claims 1, 2, 4, and 6-11.

2. U.S. Patent No. 5,835,780

This reference discloses a method for controlling power supply during service interruption. Upon detection of service interruption, a power supply unit gives notice to a processor to instruct save operations from a memory unit to a storage device, then instructs power disconnection to a second power supply, and continues power supply to the memory unit and storage device for save operation. However, the reference does not teach that an information processing device has a first power supply and a storage device has a second power supply, and the storage device transmits power-on and/or power-off requests to the first power supply of the information processing device, as recited in independent claims 1, 2, 4, and 6-11.

3. U.S. Patent No. 6,415,387 B1

This reference discloses a network computer configured to enter a low-power state in response to a low-power event, and further configured to transition from a low-power state to a full-power state in response to a wake-up event. The wake-up event may comprise a LAN wake-up command issued by a server computer. Thus, the reference discloses wake-up signals sent between two computers on a network, but not a storage device that transmits power-on and/or power-off requests to the power supply of an information processing device, as recited in independent claims 1, 2, 4, and 6-11.

4. U.S. Patent Publication No. 2004/0068672 A1

This reference discloses a controller that manages distribution of power to storage devices. The controller can cause storage devices to power on and off. However, the reference does not teach a storage device that transmits a power-on request for turning on a power supply of an information processing device and/or a power-off request for turning off a power supply of an information processing device, as recited in independent claims 1, 2, 4, and 6-11.

5. U.S. Patent Publication No. 2004/0111596 A1

This reference relates to a power conservation system that may be used over a SAN. Resources may be partitioned for controlling power supplies, and power may be turned off to unallocated or unused disk drives. However, the reference does not teach the method or system of the present invention in which a storage device transmits a power-on request for turning on the power supply of an information processing device and/or a power-off request for turning off the power supply of an information processing device, as recited in independent claims 1, 2, 4, and 6-11.

6. European Patent Publication No. EP 1302840 A2

This reference discloses a computer network in which a representative computer notifies other computers of the next power-up time whenever a power-down request arrives. Each computer has a power supply control device that stores the power-up time. When the power-up time arrives, the representative computer is powered up by its own power supply control device and instructs each power supply control device of the other computers to power up. Thus, the reference discloses sending power-up instructions over a network, but does not teach a storage device that transmits a power-on request for turning on the power supply of an information processing device and/or a power-off request for turning off the power supply of an information processing device, as recited in independent claims 1, 2, 4, and 6-11.

7. U.S. Patent Publication No. 2002/0087899 A1

This reference discloses an information storage apparatus including an uninterruptible power supply (UPS). A sequence of operation from when a power failure occurs to when power of the UPS is turned off is automatically accomplished completely without human power to thereby guarantee user data. For this purpose, the apparatus includes a disk array, a host, and a plurality of UPSs to supply power to the disk array and the host. The UPSs monitor a state change of power on a host side by a host ac control line or an SCSI unit to sequentially execute processing in an order of processing of host termination, processing for cache flush of the disk array, processing of host UPS termination, processing of host UPS termination, processing of disk array termination, and processing for termination of disk array UPS. Between the UPSs and the host and between the UPSs and the disk array, there is provided an interlocking control signal to monitor current states thereof so as to control the respective operations.

The reference discloses an uninterruptible power supply which monitors the state change of power to sequentially execute processing in an order. It does not, however, teach a storage device that transmits a power-on request for turning on the power supply of an information processing device and/or a power-off request for turning off the power supply of an information processing device, as recited in independent claims 1, 2, 4, and 6-11.

8. U.S. Patent No. 6,389,546

This reference contains the same disclosure as reference #7.

9. Japanese Patent Publication No. JP 2002-135974

This reference discloses a way to supply power to plural accessory electronic devices by using a small power supply. The electronic device has a main power supply which can drive plural accessory devices at the same time, power supply terminals for those devices, a control means to supply power to the plural accessory devices through the power supply terminals, and an interface to communicate with the outside. To start the above plural accessory devices using the main power supply, an instruction is given to shift each start timing for those accessory devices through the interface. Receiving the start confirmation signals from the accessory devices, or after the time elapses longer than predetermined, the main power supply starts to supply power to the next accessory device. Thus, by shifting the power supply start timing, the main power supply can be used even if its capacity is small.

The reference discloses shifting the power supply start timing for multiple accessory devices. It does not, however, teach a storage device that transmits a power-on request for turning on the power supply of an information processing device and/or a power-off request for turning off the power supply of an information processing device, as recited in independent claims 1, 2, 4, and 6-11.

10. Japanese Patent Publication No. JP 2002-006998

This reference discloses an electric power supply controller to control exactly the supply of power of interdependent enclosures of an information processing unit that includes plural connected enclosures regardless of the number and combination of enclosures.

In an information processing unit that makes up a system by connecting plural enclosures including CPU enclosures 1 and 2, and I/O enclosure 1-6, and a HDD enclosure 1-b, the supply of power is controlled efficiently for peripheral device enclosures including: an I/O enclosure 1-6 that is dependent on power supply condition of CPU enclosure 1 and 2, and a HDD enclosure 1-b by installation of a bus 1-5 that connects each enclosure to be connected, communication control circuits 1-3, 1-4, 1-9, and 1-e that are workable under the off status of power supply (standby status of power supply), the power supply status memory circuits 1-8 and 1-d that can store the power supply information on the enclosures other than itself collected by communication control circuits 1-9 and 1-e, and power control circuits 1-7 and 1-c.

The reference discloses known technology for controlling a power supply of an information processing device and a power supply of an interlocked peripheral device that promotes the efficiency of both operational management of a system and automation and reduces the system's electric power consumption, as discussed in the present application at paragraph [0003]. It does not, however, teach a storage device that transmits a power-on request for turning on the power supply of an information processing device and/or a power-off request for turning off the power supply of an information processing device, as recited in independent claims 1, 2, 4, and 6-11.

(f) In view of this petition, the Examiner is respectfully requested to issue a first Office Action at an early date.

Respectfully submitted,

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